

I Claim:

1. A prosthesis to replace all or a portion of a natural facet joint on a vertebral body comprising a fastening element installed within the vertebral body at or near a pedicle and without support by a lamina, and
5 an artificial facet joint structure carried by the fastening element adapted and configured to replace all or a portion of a natural facet joint.
- 10 2. A prosthesis according to claim 1 wherein the artificial facet joint structure is fixed to the fastening element.
- 15 3. A prosthesis according to claim 1 wherein the artificial facet joint structure is fixed to the fastening element by an adhesive or cement.
- 20 4. A prosthesis according to claim 1 wherein the artificial facet joint structure is fixed to the fastening element by mechanical attachment.
5. A prosthesis according to claim 1 wherein the artificial facet joint structure is removably carried by the fastening element.
- 25 6. A prosthesis according to claim 1 wherein the artificial facet joint structure is removably attached to the fastening element by frictional engagement.
7. A prosthesis according to claim 1 wherein the artificial facet joint structure is removably attached to the fastening element by a Morse 30 taper.
8. A prosthesis according to claim 1 wherein the artificial facet joint structure comprises an insert fitted to the fastening element.
- 35 9. A prosthesis according to claim 1

wherein the artificial facet joint structure comprises an insert fitted by frictional engagement to the fastening element.

10. A prosthesis according to claim 1

5 wherein the artificial facet joint structure comprises an insert fitted by a Morse taper to the fastening element.

11. A prosthesis according to claim 1

wherein the artificial facet joint structure 10 comprises a removable insert fitted to the fastening element.

12. A prosthesis according to claim 1

wherein the artificial facet joint structure pivots with respect to the fastening element.

15. 13. A prosthesis according to claim 1

wherein the artificial facet joint structure is adapted and configured to articulate with a portion of a facet joint of an adjoining vertebral body.

14. A prosthesis according to claim 1

20 wherein the artificial facet joint structure is adapted and configured to replace a caudal portion of a natural facet joint.

15. A prosthesis according to claim 1

wherein the artificial facet joint structure 25 is adapted and configured to replace a caudal portion of a natural facet joint and articulate with a cephalad portion of a facet joint of an adjoining vertebral body.

16. A prosthesis according to claim 1

wherein the artificial facet joint structure 30 is made of at least one selected prosthetic material.

17. A prosthesis according to claim 1

wherein the selected prosthetic material includes polyethylene, rubber, tantalum, titanium, chrome cobalt, surgical steel, bony in-growth material, ceramic, 35 artificial bone, or a combination thereof.

18. A prosthesis according to claim 1
wherein the fastening element is fixed to the
vertebral body by an adhesive or cement.

19. A prosthesis according to claim 1
5 wherein the fastening element includes a bony
in-growth material.

20. A method of replacing, on a vertebral
body, all or a portion of a natural facet joint using the
prosthesis defined in claim 1 to provide improved support
10 for the spinal column, the method comprising the steps of
(i) removing all or a portion of a natural
articular process from the vertebral body, and
(ii) fixing the prosthesis as defined in claim
1 to the vertebral body to replace the removed portion of
15 the natural articular process with the artificial facet
joint structure.

21. A method according to claim 20
further including a step of removing at least some of the
lamina from the vertebral body.

20 22. A method according to claim 20
further including a step of removing at least
part of a pedicle from the vertebral body.